



CITY OF  
BAINBRIDGE ISLAND

TRAFFIC OPERATIONS COMMITTEE  
WEDNESDAY, AUGUST 18, 2021  
2:00 – 3:00 PM  
ZOOM – VIRTUAL WEBINAR

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PLEASE CLICK THE LINK BELOW TO JOIN THE WEBINAR:


[HTTPS://BAINBRIDGEWA.ZOOM.US/J/98680983595](https://bainbridgewa.zoom.us/j/98680983595)

TELEPHONE: 1-253-215-8782

WEBINAR ID: 986 8098 3595

#### AGENDA

1. CALL TO ORDER / ROLL CALL / ACCEPT OR MODIFY AGENDA  
2:00 PM
2. REVIEW COMMITTEE ADMINISTRATIVE POLICY, DUTIES, REFERENCE MEMO – 5 MIN.
3. SELECT CHAIR – 5 MIN.
4. NEIGHBORHOOD TRAFFIC CALMING PROJECTS AND SPEED LIMIT REQUESTS - 35 MIN.
  - A. OVERVIEW AND TIMELINE
  - B. REVIEW OF TRAFFIC CALMING CALL-FOR PROJECTS RESPONSES
  - C. DRAFT TRAFFIC CALMING HANDBOOK
  - D. DRAFT TRAFFIC CALMING AND SPEED LIMIT EVALUATION CRITERIA
  - E. NEXT STEPS
5. SPOT LOCATION DISCUSSION
  - A. WESTBOUND FERRY TERMINAL RIGHT-HAND TURN LANE LIMITATIONS – 10 MIN.
6. NEXT MEETING AGENDA PLANNING – 5 MIN.
7. ADJOURNMENT  
3:00 PM

	<b>Administrative Policy</b>	No.	XX
	<b>Subject:</b> Traffic Operations Committee	Date:	June 28, 2021
		Authority:	RCW 35A.13.080 – City Manager – Powers and duties

### **Committee Purpose:**

The purpose of the committee is to provide the City Manager with a technically-based and objective approach to traffic operations issues as related to City-owned rights-of-way.

### **Committee Charge:**

The committee is charged with reviewing traffic operations issues and providing the City Manager with recommendations that are based upon applicable technical documents such as federal, state and local standards and guidelines that address traffic/pedestrian/bicycle safety, traffic operations, traffic circulation, parking, and other mobility issues that may arise.

The intent of the committee is not to supplant established processes (such as development/ concurrency review) or over-ride the regulatory decision-making authority of the members, but to formalize, supplement, and add transparency to the decision-making process.

It is the intention of the City Manager to thoroughly review the recommendations of the committee, but it is understood that the City Council may or may not act in accordance with committee recommendations. It is acknowledged that there is exposure to legal liability when deviating from recognized standards and guidelines.

### **Committee Composition:**

Public Works Director; Chief of Police; City Attorney; City Engineer; Deputy City Manager; Planning Director

### **Committee Meeting Support/Mechanics:**

- Agenda Development
  - Meeting topics may originate from internal or external sources and may be added to the agenda by the City Manager, Public Works Department, Police Department or Planning and Community Development Department.
- Meeting Structure
  - Meetings shall occur on a regular basis (monthly);
  - Meeting agendas will be developed and posted in accordance with City policy;
  - Meeting minutes will be produced and posted in accordance with City policy;
  - The committee will rely on staff reports prepared and distributed with the agenda;
  - Final committee recommendations will be made in writing to the City Manager.
- Public Engagement
  - Members of the public will have the opportunity to attend the meetings and offer comments prior to the beginning of each meeting.



CITY OF  
BAINBRIDGE ISLAND

PUBLIC WORKS DEPARTMENT  
MEMORANDUM

DATE: AUGUST 13, 2021  
TO: CHRIS WIERZBICKI, P.E., PUBLIC WORKS DIR.  
FROM: PETER CORELIS, P.E., CITY ENGINEER  
SUBJECT: CITY-WIDE SPEED LIMIT POLICIES AND PRACTICES

The current laws and regulations governing speed limits within the City of Bainbridge Island are as follows:

Per Bainbridge Island Municipal Code (BIMC) 10.04 the City has adopted by reference the Washington Model Traffic Ordinance (MTO) of the Washington administrative Code (WAC), Chapter 308-330. Adoption of the MTO, specifically, WAC 308-330-423, incorporates three Revised Code of Washington (RCW) statutes governing speed limits.

- RCW 46.61.400 – Basic rule and maximum limits

This statute sets the maximum lawful speeds in Cities, Counties and Highways in Washington State. The maximum lawful speed limit for City streets island-wide is therefore set by default at 25 miles per hour (MPH) where otherwise unaltered by the following two (2) overriding statutes.

Overriding statute 1:

- RCW 46.61.415 – When local authorities may establish or alter maximum limits

This local authority statute allows local authorities to determine based on an engineering and traffic investigation a maximum speed limit that is reasonable and safe that (a) decreases the speed limit at intersections; or (b) increases the limit but not more than 60 MPH; or (c) decreases the limit but not less than 20 MPH. The statue also requires that local authorities determine by an engineering and traffic investigation the proper maximum speed limit for all arterial streets. The [secondary] arterial streets within the City that require engineering investigation to set speed limits are as follows:

- ✓ NE Day Road
- ✓ NE Phelps Road
- ✓ Sunrise Drive NE
- ✓ Madison Avenue NE
- ✓ NE Valley Road-
- ✓ NE Baker Hill Road
- ✓ Lynnwood Center Road NE
- ✓ Bucklin Hill Road NE
- ✓ NE High School Road
- ✓ NE Koura Road
- ✓ NE Hidden Cove Road
- ✓ NE Eagle Harbor Drive w/o Taylor Avenue
- ✓ Miller Road NE
- ✓ Fletcher Bay Road NE
- ✓ NE Sportsman Club Road
- ✓ NE New Brooklyn Road
- ✓ NE Wyatt Way
- ✓ Ferncliff Avenue NE s/o NE High School Road
- ✓ Winslow Way e/o Madison Avenue N
- ✓ Blakely Avenue NE w/o NE Country Club Road

Lastly, under this statute non-arterial (collectors and local access) roadways in residential or business districts may have speed limits set by the local authorities at 20 MPH without conducting an engineering and traffic investigation. The majority of the island's collector and local access roads are in residential areas.

Overriding statute 2:

- RCW 46.61.440 – Maximum speed limit when passing school or playground crosswalks

The maximum speed limit in the school zone is 20 MPH only when passing a marked school or playground crosswalk with posted standard school zone or playground speed limit signs. The zone shall extend 300 feet in either direction from the marked crosswalk or school or playground property. There is no language in the code regarding a school's status as public or private when considering school zone speed limits. It would be at the discretion of the City to establish a private school speed zone and erect the proper signage.

The use of the overriding statutes on any road segment is what establishes a "Speed Zone", named thusly because it is a zone of exception to statutory speed limits. The City of Bainbridge Island has many speed zones where limits deviate from 25 MPH. School zones are just one example.

#### Defining local authority for the City of Bainbridge Island

The Municipal Research and Services Center (MRSC) provides interpretation and guidance that when a local authority changes speed limits, it should be the City's traffic engineer that performs the analyses and investigations and then issues a recommendation, but the final action should be taken by the legislative body, or, City Council in this case, in light of the investigation and recommendation, through ordinance or resolution. As a result, it's recommended that CoBI establish an ordinance or resolution with the City-wide speed limits in the future. See examples:

[Jefferson County Resolution No. 59-18](#)

[Issaquah Municipal Code Ch. 10.24 – Speed Limits](#)

[Maple Valley Municipal Code Ch. 10.10 – Speed Limits](#)

#### Guidance and Reference Documents for Setting Speed Limits by Engineering Investigation

In addition to the above-mentioned statutes governing speed limits, the Federal Highway Administration's (FHWA) Manual On Uniform Traffic Control Devices (MUTCD) For Streets and Highways is adopted under WAC 468-95-010 as modified therein, and contains the standards and guidelines for street signage and channelization as a function of speed limits and their application, as well as guidance on setting speed limits.

The guidance per the MUTCD establishes that,

- Authorized agencies should reevaluate speed limits on segments of their roadways that have undergone a significant change in roadway characteristics or surrounding land use since the last review.
- When evaluating speed limits, the following factors should be considered:
  1. The 85<sup>th</sup> percentile speed of vehicles traveling on the road;
  2. Road characteristics, shoulder condition, grade, alignment, and sight distance;
  3. The pace speed;
  4. Roadside development and environment;
  5. Parking practices and pedestrian activity;
  6. Reported crash experience for at least a 12 month period; and
  7. Other factors such as route development or comprehensive plans.

In accordance with the above laws and guidance, the engineering criteria for changing speed limits is primarily based on a target posted speed limit 5 MPH within the 85<sup>th</sup> percentile speed of vehicles traveling on the road in free-flowing traffic conditions. The secondarily, modifications to that speed limit are then considered based on the other evaluation categories.

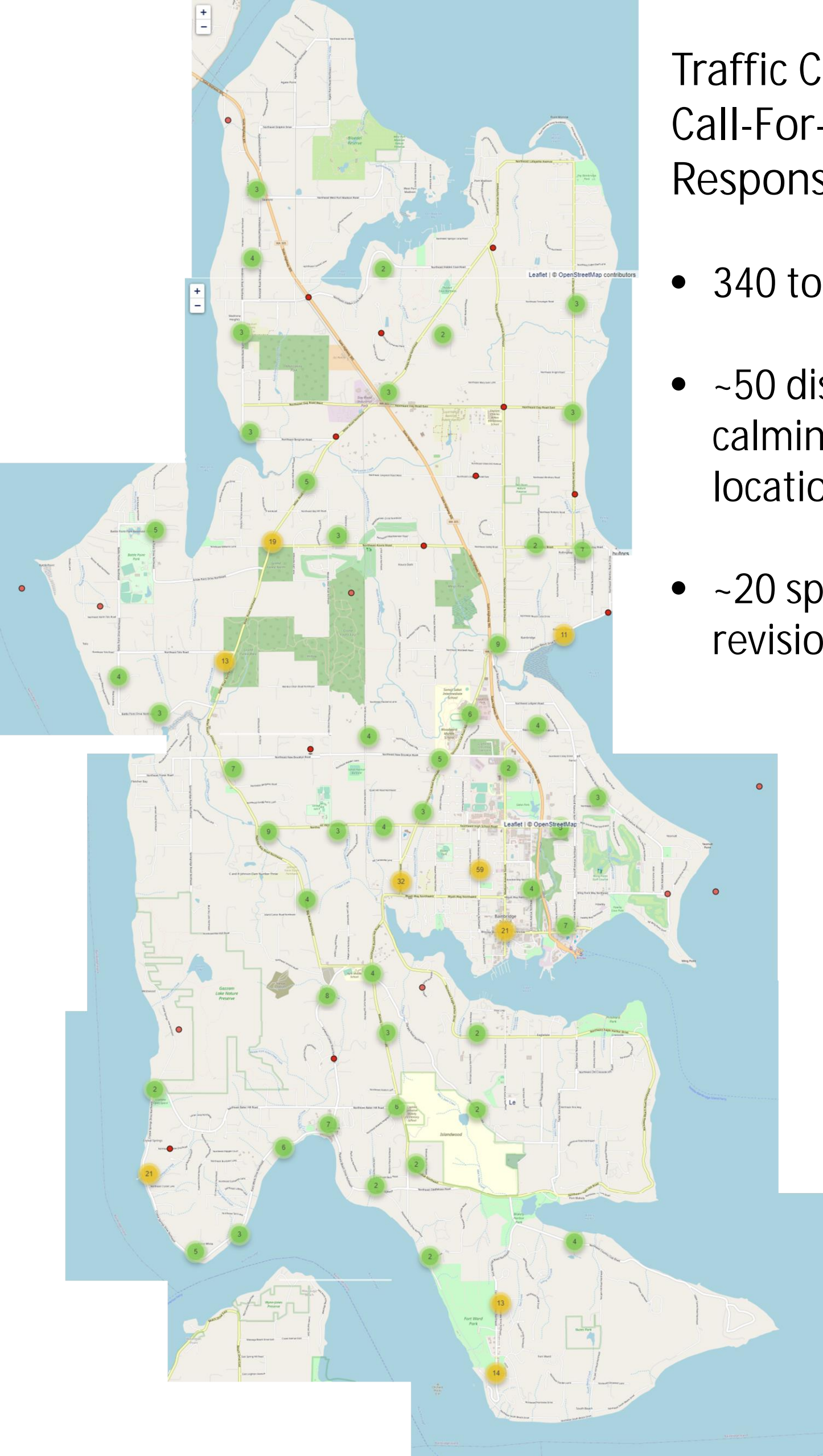
The FHWA has a web-base module titled 'USLIMITS2' where the engineering study data can be entered to produce a recommended speed limit. The module takes into account the factors listed above.

# Traffic Calming Call-For-Projects - Timeline

- July 16 – Open call for projects closed
- August 18 – TOC Meeting
- September 21 – Council review of process to date; TC handbook; Grow/Finch/Pt. White/Grand Forest project concepts
- Late October – Complete data collection
- November 17 – TOC meeting
- Early December – Council review of project prioritization and concepts
- January 22 – TOC meeting
- February – Council review of project list and funding

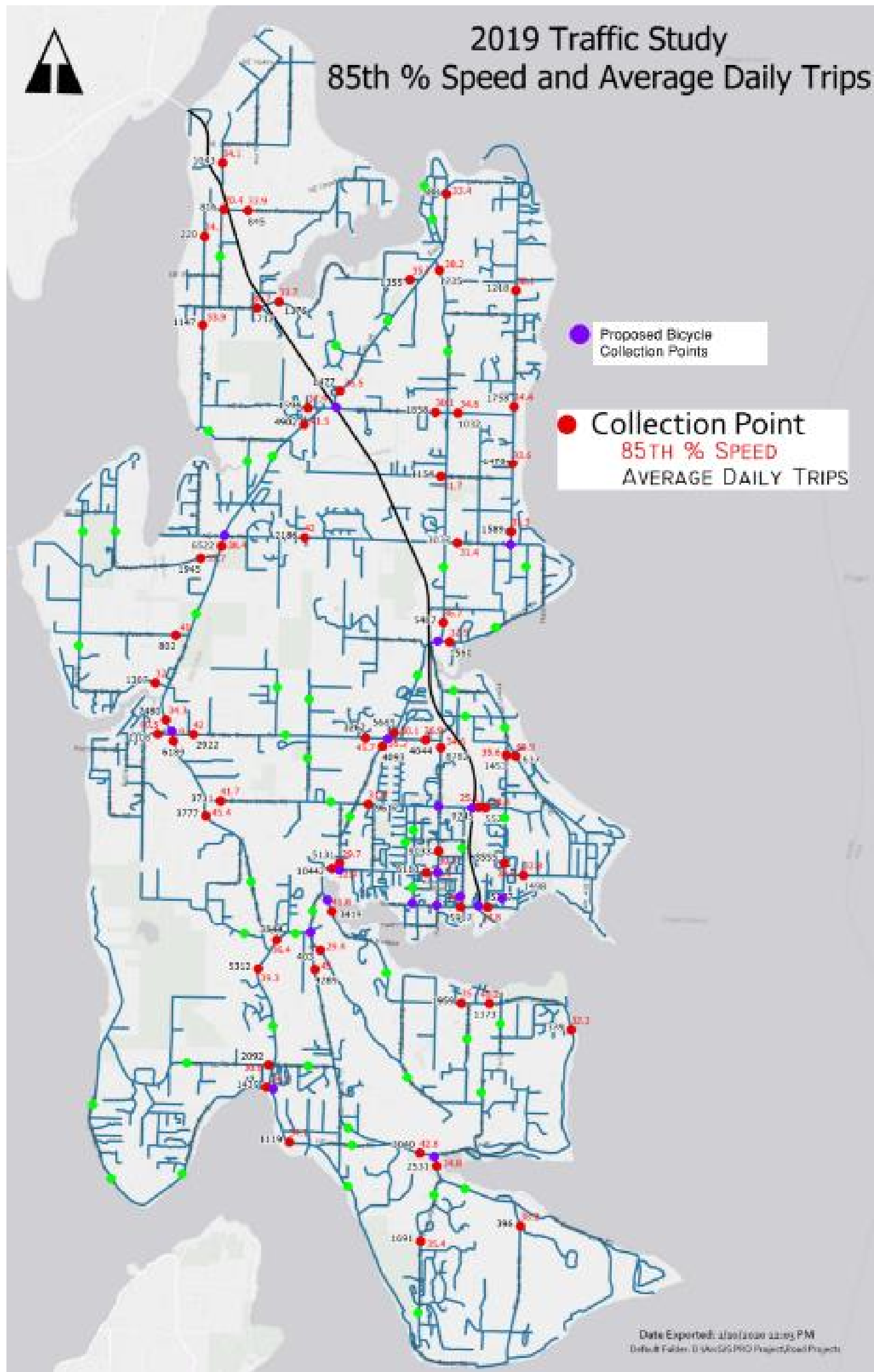
# Traffic Calming Call-For-Projects Responses

- 340 total
- ~50 distinct traffic calming locations/streets
- ~20 speed limit revisions





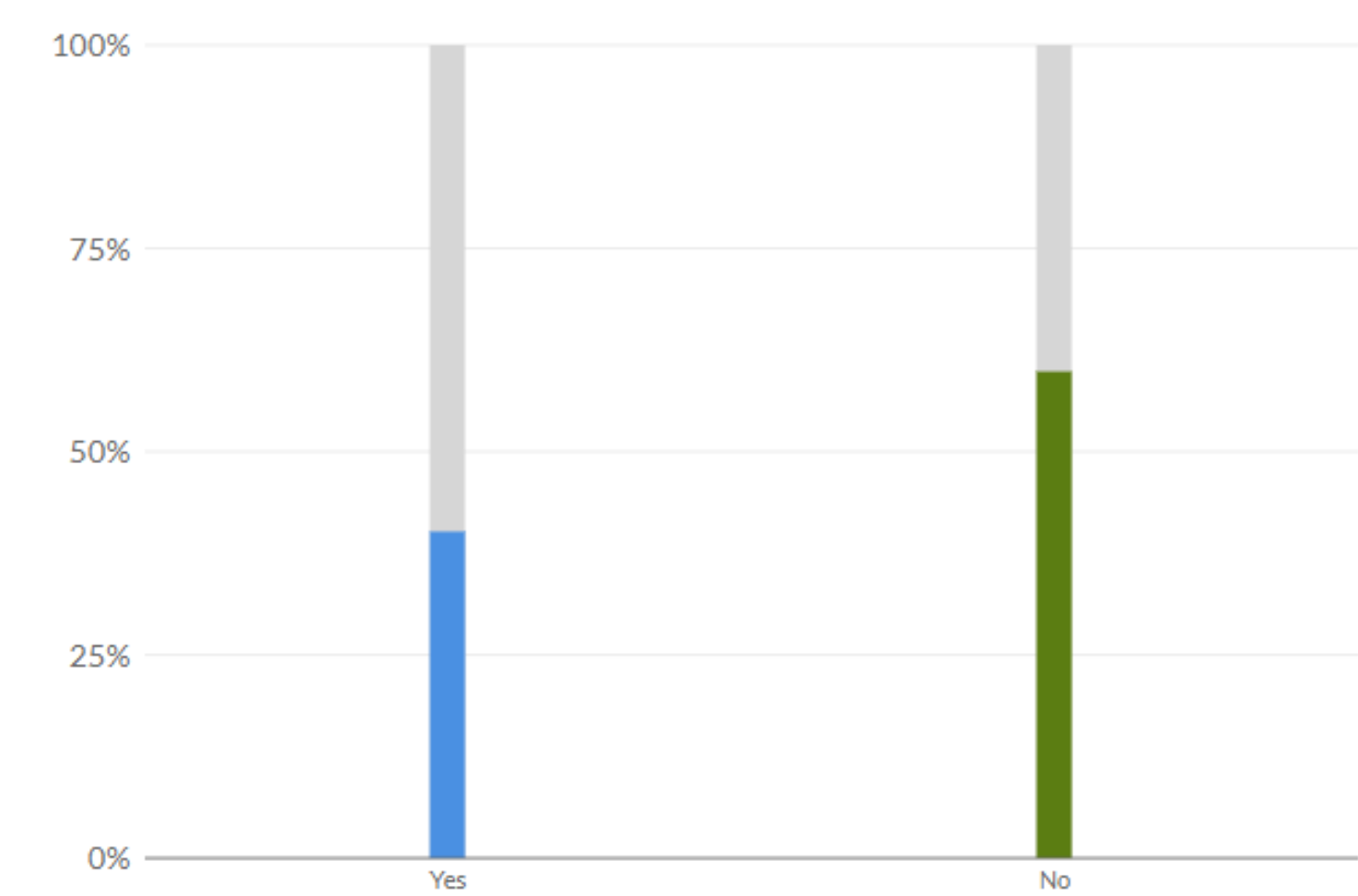
# Traffic Calming Call-For-Projects – Data Acquisition





# Neighborhood Traffic Calming Call for Projects - Feedback on speed limits

Do you think that an all-island 25 mph speed limit should be adopted (excluding SR305)?



Answer Option	%	# of Responses
Yes	40.16%	100
No	59.84%	149
Total		249



# TRAFFIC CALMING HANDBOOK

transpogroup 

# INTRODUCTION



The City of Bainbridge Island has a range of available modern traffic calming techniques. The techniques in this chart are described separately but can be combined when multiple concerns are present in a corridor. For example, vertical deflection techniques combined with signing and striping can enhance the total calming effect on a roadway. The combination of techniques would be considered on a case-by-case basis and need to consider speed data, roadway horizontal and vertical geometry and roadside conditions like driveways and intersections.

Traffic calming techniques can be effective in some settings, but cannot address:

- ▶ **Long, straight roads**, especially those over-designed for higher speeds
- ▶ **Traffic volumes** on arterial roadways through residential neighborhoods
- ▶ **Infrequent or "one off" high end speeds**, especially late at night or in the very early morning hours
- ▶ **Artificially low posted speed limits** that are not aligned with the roadway design and environment
- ▶ **Volume of delivery trucks**, especially with the increases in online ordering from many factors in the last 5-10 years

The techniques in this document are categorized based on the type of project or countermeasure, the concerns that can be addressed by each technique, information on what the technique is and how it would work in the transportation environment, and considerations for warrants and cost. Note that "active mode" is a term to combine considerations for bicyclists, pedestrians and other "rolling" non-motorized users into a single category.

## ISSUES ADDRESSED ICONS

The concerns that are best addressed by each countermeasure are indicated by icons as shown below. Some countermeasures may have additional benefits and the icons represent the primary focus.



Vehicle speed



Traffic volumes



Intersection control



Multimodal safety



Active mode facilities



ADA mobility

## TRAFFIC CALMING PHASES

In the discussion of warrants for a calming countermeasure, references to **traffic calming phases** are based on a data-based approach to traffic calming.

Typical data-based programs are divided into two categories, using field measurements of the average and 85th percentile speed of traffic (non-active mode) , obtained by a minimum 24-hour (but typically in excess of 3 days) count using radar or pneumatic tube counting devices. The total volume of vehicles per day, as obtained by the counters, are also considered in the selection of techniques.

Other factors related to the roadway environment, crashes and the unique characteristics of a site or corridor can factor into the selection of a countermeasure.

The phases are a guideline and countermeasures can be applied in any combination, based on site context and engineering judgment.

### PHASE

1

Average speeds 0-5 mph over the posted limit and 85th percentile speeds 5-10 mph over the posted limit are considered Traffic Calming Phase 1. Countermeasures for this phase focus on education and enforcement and are generally of a lower cost and lower impact to the roadway.

### PHASE

2

Average speeds greater than 5 mph over the posted limit and 85th percentile speeds greater than 10 mph over the posted limit are considered Traffic Calming Phase 2. Countermeasures for this phase include engineering projects which have more significant impact on the roadway and may require higher investment of resources.

## COST

The relative costs of each countermeasure are represented by the categories below. Actual project costs can vary based on roadway context.



Low cost projects, can be installed by local forces.



Moderate cost projects, may require installation contractors.



Moderate cost projects. Usually requires engineering design and installation contractors.



High cost projects. Requires engineering design and installation contractors. Likely a programmed capital improvement.



High cost projects. Requires engineering design and installation contractors. Likely a programmed capital improvement with property impacts.



# TECHNIQUES



# SPEED BUMPS

**WHAT ARE THEY?** Mounded asphalt, rubber or plastic products to elevate the roadway 4-6" for less than 12' of longitudinal distance, typically the full roadway width with abrupt changes in elevation.



## GOALS & EXPECTATIONS

- ▶ Calms vehicle speeds to a design speed of 10-15 mph

## CONSIDERATIONS

- ▶ Noise (braking, bump and acceleration) for adjacent properties
- ▶ Vehicle wear and tear, especially for nearby residents
- ▶ Significant disruption for sensitive occupants, cargo and bicycles
- ▶ Requires warning signage



## ISSUES ADDRESSED



PHASE 2

COST \$\$\$\$

# SPEED HUMPS

**WHAT ARE THEY?** Mounded asphalt to elevate the roadway 4-6" for 12-22' of longitudinal distance, typically the full roadway width with gradual entrance and exit curves.

Can have "cuts" to accommodate emergency vehicle wheelbases at-grade.



## GOALS & EXPECTATIONS

- ▶ Calms vehicle speeds to a design speed of 20-25 mph

## CONSIDERATIONS

- ▶ Noise (bump and acceleration) for adjacent properties
- ▶ Vehicle wear and tear, especially for nearby residents
- ▶ Significant disruption for sensitive occupants and cargo
- ▶ Requires warning signage



## ISSUES ADDRESSED



PHASE 2

COST \$\$\$\$

# SPEED TABLES/ RAISED CROSSWALKS

**WHAT ARE THEY?** Mounded asphalt to elevate the roadway 6" for greater than 22' of longitudinal distance across the full roadway width with gradual entrance and exit curves.

Typically marked and located in coordination with crosswalks. Height matches typical sidewalk elevations in curbed sections.



## GOALS & EXPECTATIONS

- ▶ Calms vehicle speeds to a design speed of 20-25 mph
- ▶ Provides an at-grade connection between sidewalks and crosswalks

## CONSIDERATIONS

- ▶ Noise (bump and acceleration) for adjacent properties
- ▶ Vehicle wear and tear, especially for nearby residents
- ▶ Significant disruption for sensitive occupants and cargo
- ▶ Requires warning signage



## ISSUES ADDRESSED



PHASE

2

COST \$\$\$\$

# RAISED INTERSECTIONS

**WHAT ARE THEY?** Raised roadway pavement within the limits of an existing roadway intersection, eliminating curbs within the intersection. Gradual entrance and exit curves on all intersection legs.



## GOALS & EXPECTATIONS

- ▶ Calms vehicle speeds to a design speed of 20-25 mph
- ▶ Provides an at-grade connection between sidewalks and crosswalks

## CONSIDERATIONS

- ▶ Noise (bump and acceleration) for adjacent properties
- ▶ Vehicle wear and tear, especially for nearby residents
- ▶ Significant disruption for sensitive occupants and cargo
- ▶ High cost
- ▶ May require drainage improvements

## ISSUES ADDRESSED



PHASE

2

COST \$\$\$\$

Urban Street Design Guide, nacto.com

# CURB EXTENSIONS

**WHAT ARE THEY?** Narrowed roadway lanes, typically at a crosswalk (intersection or midblock) to reduce crossing distance and physically narrow the roadway. Can be constructed of pavement markings with supplemental vertical markers or hardscaped with curbs.

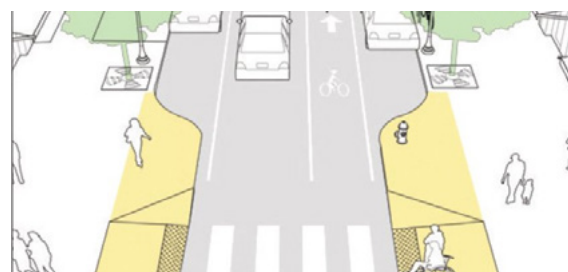


## GOALS & EXPECTATIONS

- ▶ Reduce crossing distances for pedestrians
- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Can be impacted (requiring maintenance) by larger vehicles making turns



Urban Street Design Guide, nacto.com

## ISSUES ADDRESSED



PHASE **1 2**

COST **\$\$\$\$\$**

# DIAGONAL ROADWAY DIVERTERS

**WHAT ARE THEY?** Raised medians (can be mountable for emergency access) diagonally across an intersection preventing through-movement of vehicles. Typically constructed with cuts to allow bike traffic to pass.



## GOALS & EXPECTATIONS

- ▶ Reduce vehicle volume on all legs of the intersection
- ▶ Major calming effect

## CONSIDERATIONS

- ▶ Connectivity for residents near closure
- ▶ Delay for through-traffic
- ▶ Diversion to nearby streets
- ▶ Emergency response impact
- ▶ Requires warning signage



Urban Street Design Guide, nacto.com

## ISSUES ADDRESSED



PHASE **2**

COST **\$\$\$\$\$**



# INTERSECTION CORNER DIVERTERS

**WHAT ARE THEY?** Raised curb extensions (can be mountable for emergency access) across a lane to prevent turning movements.



## GOALS & EXPECTATIONS

- ▶ Reduce vehicle volume on one leg of the intersection
- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Connectivity for residents near closure
- ▶ Diversion to nearby streets
- ▶ Emergency response impact



## ISSUES ADDRESSED



PHASE **2**

COST **\$\$\$\$\$**

# FULL ROUNDABOUT

**WHAT ARE THEY?** Circular intersection control with curbed center island, truck aprons and raised splitter islands. Typically constructed with shared use paths around the perimeter.



## GOALS & EXPECTATIONS

- ▶ Designed to be navigated at 15-20 mph speed
- ▶ Reduce crash rates and severity in intersection

## CONSIDERATIONS

- ▶ Right of way and roadside development impacts
- ▶ Cost and short-term construction impacts
- ▶ Requires warning signage

## ISSUES ADDRESSED



PHASE **2**

COST **\$\$\$\$\$**

# MINI ROUNDABOUT

**WHAT ARE THEY?** Circular intersection control with mountable raised center island, and minimal raised or marked-only splitter islands. Active mode accommodations similar to stop-controlled intersections.



## GOALS & EXPECTATIONS

- ▶ Designed to be navigated at 10-15 mph
- ▶ Reduce crash rates and severity in intersection

## CONSIDERATIONS

- ▶ Intersection volume needs to be evaluated for feasibility

## ISSUES ADDRESSED



PHASE **2**

COST **\$\$\$\$\$**

# MEDIAN ISLANDS

**WHAT ARE THEY?** Raised curbed islands in the center of the roadway which narrow lanes, provide side friction and can be pedestrian refuges for crosswalks.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Maintenance of hardscape or plantings
- ▶ Can increase roadway width
- ▶ Can divert vehicles onto shoulders and conflict with active modes using shoulders

## ISSUES ADDRESSED



PHASE **2**

COST **\$\$\$\$\$**

# CHICANES

**WHAT ARE THEY?** Reduced width, sometimes one-lane roadway using marked and/or curbed islands in an offset configuration creating a stretch of serpentine movement with minimal turn radii in the middle of an otherwise straight roadway.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Less effective at low traffic volumes
- ▶ Emergency response impact
- ▶ Drainage impacts
- ▶ Maintenance difficulties
- ▶ Noise (braking and acceleration) for adjacent properties



## ISSUES ADDRESSED



PHASE **2**

COST \$\$\$\$

# PINCH POINTS

**WHAT ARE THEY?** Reduced width, to one or two lanes, by using marked or hardscape curb extensions and islands for a short longitudinal distance.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Less effective at low traffic volumes
- ▶ Potential for head-on conflicts and driver confusion over yielding if less than 2 lanes wide
- ▶ Maintenance (snow/ice and leaves)
- ▶ Noise (braking and acceleration) for adjacent properties

## ISSUES ADDRESSED



PHASE **1 2**

COST \$\$\$\$



# LANE NARROWING

**WHAT ARE THEY?** Reducing the width of vehicle lanes through either striping or hardscape curbing to 11 feet or less, depending on roadway classification. Can be used in combination with other active mode and vehicle treatments.



## GOALS & EXPECTATIONS

- ▶ Limited calming effect

## CONSIDERATIONS

- ▶ Maintain adequate width for emergency access and transit

## ISSUES ADDRESSED



PHASE



COST \$\$\$\$

# ONE-WAY STREET/ HALF CLOSURE

**WHAT ARE THEY?** Closure of half the street to motorized non-emergency traffic through signage and physical curbing, medians and/or curb extensions.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Connectivity for residents near closure
- ▶ Emergency response impact

## ISSUES ADDRESSED



PHASE



COST \$\$\$\$



# FULL CLOSURE

**WHAT ARE THEY?** Full roadway closure to motorized non-emergency traffic with signage, curbing and medians.



## GOALS & EXPECTATIONS

- Major calming effect

## CONSIDERATIONS

- Connectivity for residents near closure
- Emergency response impact

## ISSUES ADDRESSED



PHASE **2**

COST \$\$\$\$

# PERMANENT SPEED FEEDBACK SIGN

**WHAT ARE THEY?** Placement of permanent roadside radar speed feedback signs with solar or direct wired power sources.



## GOALS & EXPECTATIONS

- Minor to major calming effect

## CONSIDERATIONS

- Direct wired signage can be expensive to install
- Signs can become "background" and lose effectiveness over time
- Signs can be abused by high end speeders
- Reliant on driver willingness to adhere to posted limits

## ISSUES ADDRESSED



PHASE **1**

COST \$\$\$\$

# MOBILE SPEED FEEDBACK SIGN

**WHAT ARE THEY?** Use of battery powered radar speed feedback signs that can be rotated to existing and/or dedicated poles at different sites by City crews or police. Coordinate with Police Department.



## GOALS & EXPECTATIONS

- ▶ Minor to major calming effect

## CONSIDERATIONS

- ▶ Battery power can limit effective time to less than a week on busier streets
- ▶ Requires staff time to retrieve trailer
- ▶ Reliant on driver willingness to adhere to posted limits
- ▶ Potential for vandalism

## ISSUES ADDRESSED



PHASE 1

COST \$\$\$\$\$\$

# SPEED FEEDBACK TRAILER

**WHAT ARE THEY?** Vehicle mounted solar or battery powered speed feedback signs that can be towed to any roadside location as needed. Coordinate with Police Department.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Requires available shoulder or roadside space
- ▶ Requires staff time to retrieve trailer
- ▶ Reliant on driver willingness to adhere to posted limits
- ▶ Potential for vandalism

## ISSUES ADDRESSED



PHASE 1

COST \$\$\$\$\$\$

# AWARENESS CAMPAIGN

**WHAT ARE THEY?** Promotional material prepared by City staff or consultants to aid neighbors in promoting adherence to posted limits and awareness of active modes on residential streets.



## GOALS & EXPECTATIONS

- ▶ Limited calming effect

## CONSIDERATIONS

- ▶ Recommend limiting to residential roads and neighborhoods
- ▶ Potential to create neighborhood conflict
- ▶ Reliant on driver willingness to adhere to posted limits

## ISSUES ADDRESSED



PHASE

1

COST

\$\$\$\$\$

# THERMOPLASTIC ON-PAVEMENT LEGENDS

**WHAT ARE THEY?** Torch-down markings including the posted speed limit (with background), "SLOW" and turn arrows, and transverse bars to place information more in the driver's eyeline.



## GOALS & EXPECTATIONS

- ▶ Limited calming effect

## CONSIDERATIONS

- ▶ Reliant on driver willingness to adhere to posted limits

## ISSUES ADDRESSED



PHASE

1

COST

\$\$\$\$\$

# ADD LANE STRIPING

**WHAT ARE THEY?** Add road edge stripes/ fog lines to delineate lanes.



## GOALS & EXPECTATIONS

- ▶ Limited calming effect

## CONSIDERATIONS

- ▶ Roadway aesthetics need to be considered in some neighborhoods
- ▶ Long-term maintenance

## ISSUES ADDRESSED



PHASE

1

COST \$\$\$\$\$\$

# REMOVE LANE STRIPING

**WHAT ARE THEY?** Remove existing striping, typically centerlines, from lower classification roadways.



## GOALS & EXPECTATIONS

- ▶ Limited calming effect

## CONSIDERATIONS

- ▶ Removed lines leave "shadows" which are still visible in low light and/or in rainy conditions

## ISSUES ADDRESSED



PHASE

1

COST \$\$\$\$\$\$



# PROFILED STRIPING

**WHAT ARE THEY?** Place thermoplastic striping with built-in raised “rumbles” instead of painted lines.



## GOALS & EXPECTATIONS

- ▶ Limited calming effect
- ▶ Can create active mode space

## CONSIDERATIONS

- ▶ High cost
- ▶ Maintenance

## ISSUES ADDRESSED



PHASE

1

COST \$\$\$\$\$\$

# WARNING AND GUIDANCE SIGNAGE (STATIC)

**WHAT ARE THEY?** Placement of MUTCD compliant roadside signage to reinforce posted limits, warn of road conditions or awareness of other modes.



## GOALS & EXPECTATIONS

- ▶ Limited calming effect

## CONSIDERATIONS

- ▶ Signs can become “background” and lose effectiveness over time
- ▶ Excessive signage contributes to loss of effectiveness
- ▶ Reliant on driver willingness to adhere to posted limits

## ISSUES ADDRESSED



PHASE

1

COST \$\$\$\$\$\$

# WARNING AND GUIDANCE SIGNAGE (LIT/FLASHING/ACTUATED)

**WHAT ARE THEY?** Use of signage with LED perimeter or inlaid lighting, programmed to either continually flash, flash during certain hours, or be tied to detection of vehicle approach and vehicle speed.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Higher cost of installation compared to other signage types
- ▶ Typically use solar power, or costs increase further

## ISSUES ADDRESSED



PHASE

1

COST \$\$\$\$

# NEIGHBORHOOD ENTRANCE TREATMENTS

**WHAT ARE THEY?** Use of signage, including landscape architecture and striping, in combination with other treatments, to notify drivers they are entering low-speed residential roadways off of higher speed and volume arterials.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Installation cost and maintenance may need to be shared with neighborhood associations
- ▶ Reliant on driver willingness to adhere to posted limits

## ISSUES ADDRESSED



PHASE

1

COST \$\$\$\$

# SHRUBS AND TREES (PLANTER STRIPS/MEDIANS)

**WHAT ARE THEY?** Planting of vegetation to create a more constrained roadway environment and introduce side friction. A planted street has less of an “arterial” (or higher classification) appearance and can invite lower speeds and more use by other modes which has a calming effect.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect

## CONSIDERATIONS

- ▶ Needs to be maintained for aesthetics and to ensure visibility needed for safety of all modes is not obscured
- ▶ Cost of establishment and long-term watering
- ▶ Site-specific selections need to be made to ensure damage is not done to adjacent pavements

## ISSUES ADDRESSED



PHASE **1**

COST **\$\$\$\$\$**

# ILLUMINATION

**WHAT IS IT?** Adding of roadside lighting at street and/or pedestrian scales.



## GOALS & EXPECTATIONS

- ▶ Increased safety and visibility for all modes

## CONSIDERATIONS

- ▶ Potential right of way impacts
- ▶ May increase light pollution and spillover into adjacent residential properties

## ISSUES ADDRESSED



PHASE **X**

COST **\$\$\$\$\$**



# ADVISORY SHOULDERS

**WHAT ARE THEY?** Restriping the road to a single lane in the middle, with dashed lines separating both shoulders for active mode use. Passing vehicles enter the active mode space, when necessary.



FHWA.dot.gov

## GOALS & EXPECTATIONS

- ▶ Minor calming effect
- ▶ Creative active mode connections

## CONSIDERATIONS

- ▶ Driver unfamiliarity
- ▶ No physical barrier between active modes and vehicles
- ▶ Higher volumes can negate the benefits to active modes if shoulders are frequently occupied



FHWA.dot.gov

## ISSUES ADDRESSED



PHASE

2

COST \$\$\$\$

# ENHANCED CROSSWALKS

**WHAT ARE THEY?** Adding RRFBs, HAWKs, pedestrian signals and other signed and marked enhancements to crosswalks.



## GOALS & EXPECTATIONS

- ▶ Minor calming effect
- ▶ Create active mode connections
- ▶ Improve active mode safety

## CONSIDERATIONS

- ▶ No direct impact to speeds
- ▶ Calming effect is based on regular usage and perception of the street as a low-speed multimodal environment

## ISSUES ADDRESSED



PHASE

1

COST \$\$\$\$

### Traffic Calming Project Prioritization Worksheet

The City of Bainbridge Island is working to implement project ideas from the community that will improve conditions for people walking, biking or rolling in neighborhoods. It is important that projects are prioritized to determine funding and scheduling of potential countermeasures and improvements. Projects will be considered for analysis and design of possible countermeasures or improvements based on the following:

Category	Criteria	Project	Possible Score
<b>Safety</b>			
Traffic Speed	Greater than 30% of vehicles 5 mph or more over posted speed limit OR 85th percentile speeds 10 or more mph over posted speed limit		8
	Greater than 25% of vehicles 5 mph or more over posted speed limit OR 85th percentile speed 7 to 10 mph over posted speed limit		6
	Greater than 15% of vehicles 5 mph or more over posted speed limit OR 85th percentile speed 5 to 7 mph over posted speed limit		4
	Greater than 10% of vehicles 5 mph or more over posted speed limit OR 85th percentile speed 3 to 5 mph over posted speed limit		1
	85th percentile speed less than 3 mph over posted speed limit		0
5-Year Collision History (in the project corridor)	4 or more		6
	2 to 3		2
	1 or less		0
	<i><b>*For each collision involving bicyclists or pedestrians, add 2 points; for each serious injury or fatal collision, add 6 points.</b></i>		
Roadway Classification & Volumes	Residential with volumes greater than 80% of maximums identified in Table 3-4, ITWP		6
	Collector or Secondary Arterial with volumes greater than 80% of maximums identified in Table 3-4, ITWP		4
	Roadway with volumes between 60 and 80% of maximums identified in Table 3-4, ITWP		2
	Roadway with volumes less than 60% of maximums identified in Table 3-4, ITWP		0
	<i><b>Principal arterials are not recommended for physical traffic calming</b></i>		
Total Safety Points			0 / 20
<b>Roadway Characteristics</b>			
Bike and Pedestrian Facilities	Roadway has no bike lane or sidewalk AND narrow (less than 2 feet wide) shoulders		4
	Roadway has no bike lane or sidewalk but has (greater than or equal to 2 feet wide) shoulders		2
	Roadway has bike lanes and/or sidewalks and/or shared use path on at least one side		0
Horizontal Geometry	Roadway is straight for at least 1/4 mile		2
	Roadway has curves but good sight distance		1
	Roadway has tight curves and limited sight distance		0
Vertical Geometry	Roadway is flat with no sight distance concerns		2
	Roadway has grade differences, but good sight distance		1
	Roadway has grade differences, and hills limit sight distance		0
Total Roadway Characteristics Points			0 / 8
<b>Community Context</b>			
School Proximity	Location is within a designated school speed zone (posted 20 mph speed limit)		3
	Location is within 1/4 mile of a school or designated as a Safe Route to School		1
	Location is not within 1/4 mile of a school and is not designated as a Safe Route to School		0
Park Proximity	Location contains park frontage		3
	Location is within 1/4 mile of a park		1
	Location is not within 1/4 mile of a park		0
Emergency/Transit/Freight	Location is not on a primary/routine emergency vehicle route, transit route, or truck route		2
	Location is on one of the following: primary/routine emergency vehicle route, transit route, or truck route		1
	Location is on two or more of the following: primary/routine emergency vehicle route, transit route, or truck route		0
Total Community Context Points			0 / 8
			0 / 36